Course Number H7211A / B
Opt. 212
Scheduled, Dedicated
Frame Relay Network Analysis

Overview

Gain in-depth understanding of fault isolation and analysis techniques on Frame Relay Networks

Course Overview

This two-day course focuses on how to use the Agilent WAN Internet Advisor to analyze Frame Relay traffic and understand Frame Relay Technology.

The course will emphasize Frame Relay testing techniques and will introduce practical troubleshooting case scenarios. You will leave this course with a clear understanding of concepts such as LAN Internetworking and Frame Relay to ATM Interworking.

The student will acquire the necessary techniques to rapidly isolate problems associated with Frame Relay Interworking and interconnection of LANs. This course includes technology fundamentals and extensive hands-on labs.

What You Will Learn

- Use the Agilent WAN Internet Advisor
- Connect the Agilent Internet Advisor's Interfaces to WAN Network
- Interpret the Frame Relay Frame and Apply Decoding and Troubleshooting Techniques for Solving Day-to-day Problems, Using the Internet Advisor's Frame Relay Capabilities
- Setup the Internet Advisor to Monitor, Capture, Filter and Analyze Frame Relay Traffic
- Setup the Internet Advisor to Emulate and Generate Frame Relay Traffic for Characterizing PVC (Permanent Virtual Circuit) Performance
- Plan for Future Growth by Understanding the Relationship Between CIR (Committed Information Rate) and Port Speed

Specifications

Course Type

User/Application Training

Audience

Network engineers, network managers, network consultants and anyone who works with Frame Relay or wants to know more about this interesting Topology.

Prerequisites
Basic understanding of Wide Area Networks (WANs). However, the course will include a comprehensive discussion of the evolution of internetworking in order to provide the background necessary to understand Frame Relay.

Course Length
2 days

Course Format
Lecture/discussion, including extensive hands-on exercises with the Agilent Internet Advisor detailing a typical Frame Relay troubleshooting scenario when the link is down or finding out the cause of a 'slow response' in the Frame Relay network.

Delivery Method
Scheduled (at Agilent training locations) or *Dedicated* (at customer site)
To save you time and travel, many Agilent courses can be delivered at your site. Agilent can provide required equipment, or save money by furnishing your own.

Detailed Course Agenda

Introduction to Frame Relay
- Overview of Frame Relay
- Evolution
- A Quick Definition of FR
- LAN Internet Working
- FR/ATM Interworking

Frame Relay Technology
- Frame Relay Standards
- Frame Relay Protocol
- Local Management Interface
- PVC Management & SVC
- UNI & NNI
- CIR
- CLLM
- Multi-Protocol Encapsulation

Introduction to the Internet Advisor
- Internet Advisor's Overview
- User Interface

How to connect to the Network
- Monitoring
- Emulating

FR Internet Advisor's Solution
- The WAN Analysis Tree
- The Tool Bar Option

FR and other Technologies
- FR to ATM Interworking
- FR Multicast
- SPVC
- Data Compression
- Voice Over FR

Frame Relay Testing
- Testing Strategy
- Frame Relay Baselining
- Installation Strategy
- Service Characterization
- The Turn Up Process

Troubleshooting Frame Relay
- Troubleshooting Strategy
- Frame Relay Link is Down
- Slow Response

State-of-the-Technology
- Ports Speeds Offered
- Backbone Technology
- SVC Services
- Multicast Services
- NNI Support
- Customer Network Management
- Interworking with Other Services
- Worldwide Users
- PVC and CIR Statistics
- Traffic Types

This Course Includes the Following Sixteen Labs:

- Introduction to the IA Win95 User Interface
- Introduction to the Agilent Internet Advisor Hardware
- BERT Testing
- Decoding a Frame Relay HEX Trace
- Analyzing an IPX Frame on a FR Trace
- Monitoring a Frame Relay Link on RS 232
- Filtering on One DLCI
- Analyzing a TCP/IP File Transfer Trace
- Monitoring Frame Relay Traffic on a T1 Interface
- Emulating the NET and the CPE Sides
- Generating FR Traffic (Testing Throughput with Traffic Generation).
- Pinging IP Addresses (Testing Network Connectivity)
- Monitoring the Frame Relay Network
- Ping IP Addresses
- Telnet into a Router
- Transfer Files Using FTP

Case Study:
Frame Relay Link is Down

The connections over the Frame Relay link are no longer available. Where do you start troubleshooting: At the application, at the link or at the physical? How can you use your protocol analyzer to find out if clocks are available, if polling sequences are correct, if PVCs are configured correctly?

Case Study:
Slow Response

Users start complaining about slow response in the network. How could you troubleshoot if the problem is a network, application, or a CIR configuration?

Summary of Skills Learned

A quick review of concepts, testing techniques and troubleshooting scenarios learned throughout the day.

For the latest information on class schedules and locations, visit our website:
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Printed in USA 05/00
5966-3157E

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